

# **Printer Board-N1/Ethernet Network Interface Adapter iN-E5**

# **SERVICE MANUAL**

**REVISION 0**

**NOV. 2001**

## Application

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***Imprimé au Japon***

## Caution

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

# 1 Symbols Used

This documentation uses the following symbols to indicate special information:

Symbol	Description
	Indicates an item of a non-specific nature, possibly classified as Note, Caution, or Warning.
	Indicates an item requiring care to avoid electric shocks.
	Indicates an item requiring care to avoid combustion (fire).
	Indicates an item prohibiting disassembly to avoid electric shocks or problems.
	Indicates an item requiring disconnection of the power plug from the electric outlet.
 Memo	Indicates an item intended to provide notes assisting the understanding of the topic in question.
 REF.	Indicates an item of reference assisting the understanding of the topic in question.
	Provides a description of a service mode.
	Provides a description of the nature of an error indication.
	Refers to the Copier Basics Series for a better understanding of the contents.

## 2 Outline of the Manual

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This Service Manual provides basic facts and figures about the Printer Board-N1/Network Interface Board iN-E5 that may be used when servicing the Board in the field.

This Service Manual consists of the following:

Chapter 1 Introduction:	product outline, features, specifications, operation
Chapter 2 Operation:	functional blocks of the board, upgrading
Chapter 3 Disassembly/Assembly:	disassembly/assembly procedure
Chapter 4 Installation:	installation procedure for the board
Chapter 5 Troubleshooting:	service mode, self diagnosis
Appendix:	list of special tools

The descriptions in this manual are subject to change, and major changes will be communicated in the form of Service Information bulletins.

The service persons are expected to be fully familiar with the contents of this manual and the service information bulletins so as to equipped themselves with the ability to respond to the needs of the field, i.e., isolating and correcting faults.

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# CHAPTER 1

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## INTRODUCTION

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# 1 Outline

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## 1.1 Outline

The names and the functions of the accessories configured in a system are as follows:

### Printer Board-N1

When built inside the host machine, it enables the host to function as a printer.

With an Adobe PS3 Module-B1 mounted to the expansion ROM slot of the printer board, the host can serve as a PS printer.

Addition of a Flash ROM Module FR-65, moreover, will enable downloading of fonts and macros.

### Ethernet Network Interface Adapter iN-E5

Built into the host machine together with a Printer Board-N1, it enables the host to function as a network printer.

### Hard Disk HD-65

Built into the host machine together with a Printer Board-N1, it will enable PDL data or data that has undergone RIP processing.



## 2 Specifications

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### 2.1 Printer Board-N1

CPU	Power PC (200 MHz)
ROM	8 MB
RAM	Standard : 8 MB (72 MB max.)
Interface	Parallel (IEEE1284), USB
Page description language	PCL 5e, PCL-XL 2.0
OS	Windows 2000/NT4.0/Me/98/95 MAC OS (8.5/8.6 or later) 45 scalable fonts as standard (MicroType fonts); 32 TrueType fonts, 9 bitmap fonts
Accessory	Adobe PS3 Module-B1 (includes a total of 136 fonts) Flash ROM Module FR-65

### 2.2 Ethernet Network Interface Adapter iN-E5

Interface	10Base-T, 100Base-TX
CPU	RISC CPU (100 MHz)
Protocol	IPX/SPX, TCP/IP, AppleTalk, NetBIOS/NetBEUI
Print service	Bindery PServer, NDS PServer, NDPS, LPD, Port9100, IPP, CAP (Canon AppleTalk PrintServer)

### 2.3 Hard Disk HD-65

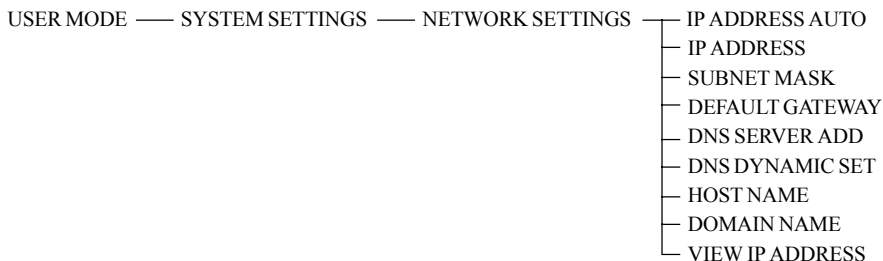
Capacity	10 GB
Interface	ATA-3

## 3 Operation

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### 3.1 Making Network Settings

The Board's network settings are made in user mode, and the settings are layered as shown in the following diagram; for details, see the Network Guide.



### 3.2 Making Printer Settings

The Board's printer settings are made from a PC or the host's control panel. The following shows how settings may be made from the control panel and the layers into which the settings are grouped; for details on making settings from a driver, see the Printer Guide:

#### Making Settings

- 1) Press the System key so that 'READY' appears and the machine enters printer mode.
- 2) Press the Go key so that 'PAUSED' appears and the machine goes offline.
- 3) Press the Menu key to select the desired menu.
- 4) Press the Item key to select the desired item.
- 5) Press the Value key, select a setting, and press the Enter key to store.

## Hierarchy of the Settings

Menu Name	Description
SECURED JOB MENU	
ENTER PASSWD	Prompts you to enter the password required for printing the selected job.
COPIES	Sets the number of copies to print for the secured print job.
INVALID PASSWD REENTER	Asks whether or not you want to reenter the password.
SHUTDOWN MENU	
SHUT DOWN	Shuts down the printer.
TEST MENU	
SHOW PAGE CONT	Displays the number of pages printed.
TEST PRINT	Prints the Test Print page.
PRINT PCL FONTS	Prints the PCL Font list.
PRINT PS FONTS *1	Prints the PS Font list.
PRINT JOB LOG	Prints the job log.
CONTINUOUS TEST	Prints the Test Print page continuously.
PRINT EN CONFIG	Prints the Ethernet configuration page.
PCL MENU	
RESOLUTION	Displays the resolution used for printing.
COPIES	Sets the number of copies to print.
PAGESIZE	Sets the default paper size to use when printing from the printer.
ORIENTATION	Sets the paper orientation.
FORM	Sets the number of lines on a page.
FNTSRC	Sets the font source.
FONTNUM	Sets the font number.
PT. SIZE	Sets the default point size.
PITCH	Sets the default pitch.
SYMSET	Sets the default symbol set.
AUTO CR	Turns auto carriage return on or off.
WIDE A4	Turns wide A4 on or off.
OVERRIDE	Turns override on or off.
PS MENU *1	
RESOLUTION	Displays the resolution used for printing.
COPIES	Sets the number of copies to print.
PRINT ERRS	Specifies whether or not to print PS print errors.
FEED	Sets the paper source to use when printing.
TRAY SWITCH	Enables the printer to switch to Stack Bypass if the selected drawer is empty.

## CONFIG MENU

## JAM RECOVERY

Enables the printer to resume printing once a paper jam has been cleared.

## AUTOCONT

Turns the Automatic Continue function, for error handling, on or off.

## DENSITY

Sets the relative darkness of the printouts.

## ECONOMY MODE

Turns Economy Mode, for reducing toner usage, on or off.

## REFINE

Enables the printer to enhance the quality of the printouts.

## JOB CONTROL MENU

## JOB SECURING TIME

Sets the length of time a secured job is held on the printer.

## PARALLEL MENU

## PERSONALITY

Set the default print personality for the parallel interface.

## BIDIRECTION

Specifies whether or not to use bidirectional control.

## I/O TIMEOUT

Sets the timeout interval for print jobs received via the parallel interface.

## USB MENU

## PERSONALITY

Sets the default print personality for the USB interface.

## I/O TIMEOUT

Sets the timeout interval for print jobs received via the USB port.

## ETHERNET MENU \*2

## PERSONALITY

Sets the default print personality for the optional network interface board.

## I/O TIMEOUT

Sets the timeout interval for the optional network interface board.

## LANGUAGE MENU

## LANG

Sets the default language for the LCD display on the printer.

## REST MENU

## RESET

Resets the selected settings to their default values.

## JOB LOG MENU

## AUTO PRINT LOG PER 50/30 JOBS

Specifies whether or not to automatically print the job log.

## AUTO CLEAR LOG EVERY 50/30 JOBS

Specifies whether or not to automatically clear the job log.

## JOB LOG FULL

Sets the default action for when the job log becomes full.

## GMT DIFFERENTIAL TIME

Displays the time difference from Greenwich Mean time.

## DAYLIGHT SAVING TIME

Displays whether or not to use daylight saving time.

\*1: displays only after the Adobe PS3 Module-B1 has been installed.

\*2: displays only after the network interface board has been installed.

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# CHAPTER 2

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## OPERATION

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# 1 Construction

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## 1.1 Outline

The three Boards described in this manual are designed for the following functions:

- Printer Board  
Develops print data written in PCL.
- Network Interface Board  
Connects the host machine with a network.
- Hard Disk (HDD)  
Stores print data and log data.

## 1.2 Functional Blocks of the Printer Board

The printer board is divided into the following functional blocks:

### a. CPU

It is equipped with a Power PC (200 MHz), and it processes data as instructed by the program contained in the built-in RAM in the CPU.

- [1] Controls the SDRAM.
- [2] Controls the ROM.
- [3] Controls the printer board interface, hard disk interface, and network board interface.
- [4] Communicates with the host machine.
- [5] Controls the IEEE1284 parallel port interface.
- [6] Controls compression/expansion of image data.

### b. ASIC

The ASIC controls the workings of the printer board as instructed by the control program stored in the ROM. Its main functions are as follows:

- [1] Performs image smoothing.
- [2] Performs EEPROM control.

### c. DRAM

The DRAM possesses 8 M bytes of memory as standard, and functions as follows:

- [1] Stores print data entered from an external device (reception buffer).
- [2] Stores code data or pattern data resulting from conversion of image data.
- [3] Stores fonts processed by the printer board.

The Board is equipped with a single slot, and addition of a 32 MB or 64 MB expansion RAM DIMM will enable storage of up to 72 M bytes of data.

**d. Built-In Program ROM**

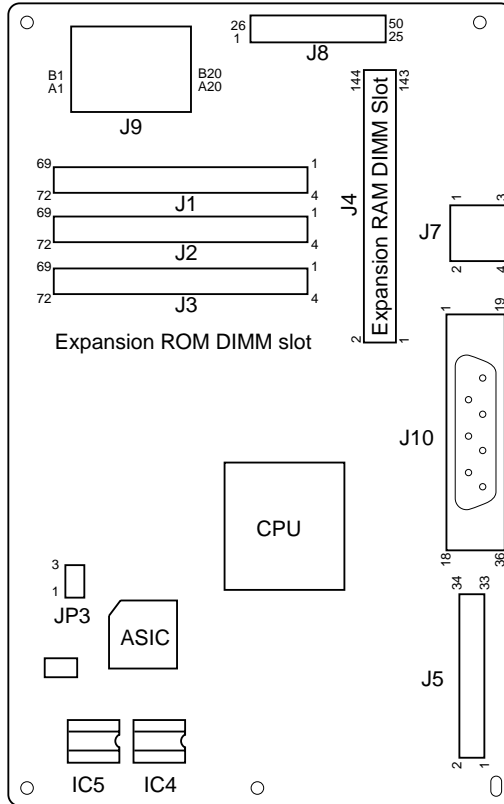
The built-in program ROM offers 8 MB of memory, and holds a translator used to translate PCL into an internal processing language and then into image data; it also is used to control the printer board and stores fonts.

**e. Expansions ROM DIMM (J1, J2, J3)**

The expansion ROM DIMM may be a ROM DIMM for upgrading, accessory PS module, and flash ROM DIMM (3 pc. max.; any slots may be used).

**f. EEPROM (IC4, IC5)**

The EEPROM is a memory capable of electrically deleting or writing data. It offers 32 K bits of memory, and is used to retain data in the absence of power (data including printing environment, number of prints).



F02-102-01

JP3 : Do not use. (Be sure to keep 1 and 2 shorted.)



## 1.3 Upgrading

Mount the ROM DIMM designed for upgrading to a slot (J1, J2, or J3) so that the functions of the existing built-in program ROM will be stopped, and its contents will be replaced with the contents of the newly mounted ROM DIMM. At this time, you need not remove the existing built-in program ROM.

When you have remove the ROM DIMM from the slot, the contents of the built-in program ROM will take over.

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# CHAPTER 3

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## DISASSEMBLY/ASSEMBLY

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# 1 Disassembly and Assembly

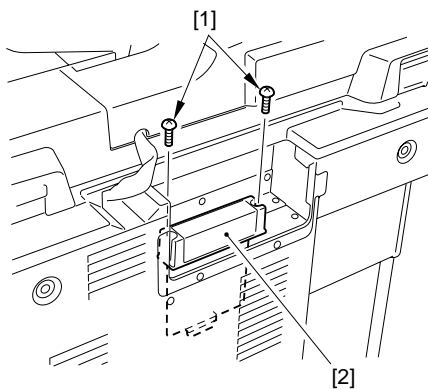
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Here, instructions on how to disassemble/assemble the machine are given together with explanations of its mechanical characteristics; be sure to keep the following in mind when going through the work:

1.  Before starting the work, be sure to disconnect the power plug.
2. Unless otherwise specially indicated, reverse the steps used to disassemble the machine when assembling it.
3. Identify the screws by types (length, diameter) and location.
4. To ensure electrical continuity, the mounting screws used for the grounding wire and arrestors are equipped with toothed washers. Do not leave them out when assembling the machine.
5.  As a rule, do not operate the machine with any of its parts removed.

## 1.1 Removing the Hard Disk

- 1) Remove the 2 screws [1], and detach the hard disk [2].



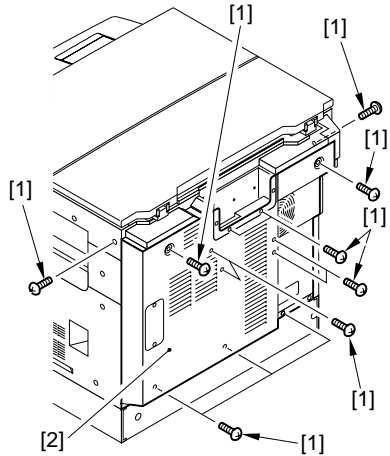
F03-101-01

## 1.2 Removing the Network Interface Board



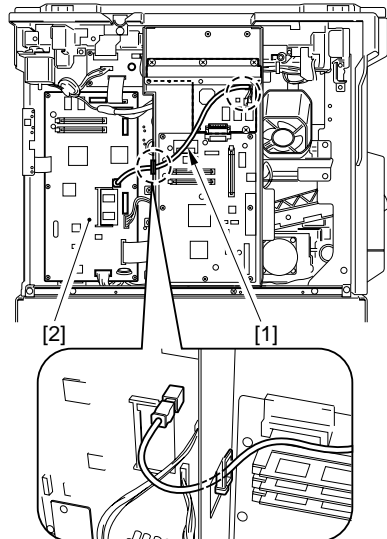
If a hard disk exists, be user to remove it in advance.

- 1) Remove the 13 screws [1], and detach the rear cover [2].



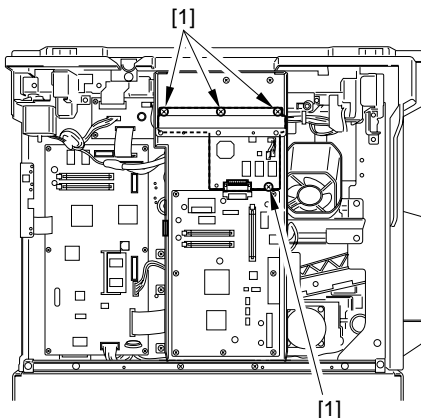
F03-102-01

- 2) Remove the USB cable [1] from the image processor PCB [2].



F03-102-02

- 3) Remove the 4 screws [1], and detach the network interface board.



F03-102-03

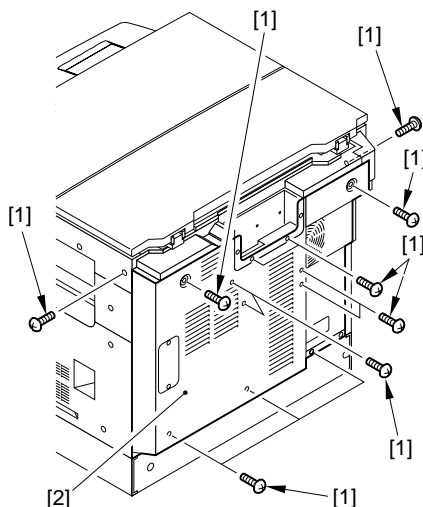
### 1.3 Removing the Printer Board

- 1) Go to User Menu to TEST MENU, run TEST PRINT, to output a test print.
- 2) If the machine has the network interface board, got to User Menu to TEST MENU, run PRINT EN CONFIG to output the Ethernet configuration page.
- 3) Turn off the power switch.



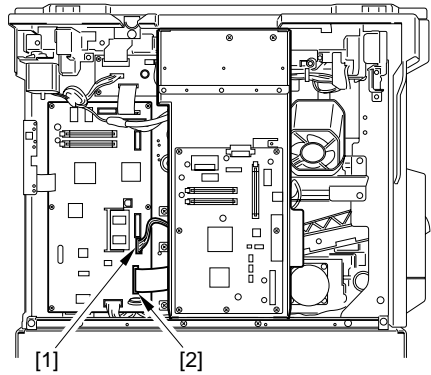
If a hard disk or a network interface board exists, be sure to remove it in advance.

- 4) Remove the 13 screws [1], and detach the rear over [2].



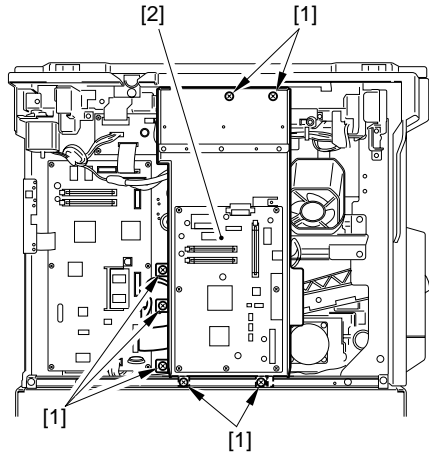
F03-103-01

- 5) Disconnect the connector [1], and detach the flexible cable [2].



F03-103-02

- 6) Remove the 7 screws [1], and detach the printer board [2].



F03-103-03

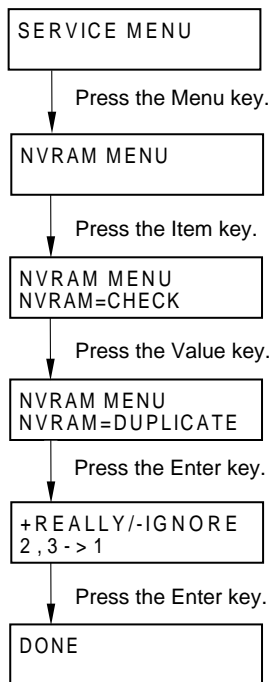
- 7) If you are replacing the existing printer board with a new one, be sure to perform the following to make printer settings and transfer counter readings.

- 8) Remove the RAM DIMM/ROM DIMM/EEPROM (IC4, 5) from the existing printer board, and mount them to the same locations on the new printer board.



If a ROM DIMM designed for upgrading exists on the old printer board, be sure that the built-in ROM or the upgrading ROM on the new printer board are of the latest version.

- 9) Press the Additional Function key and then the ID (#) key in the control panel to start service mode.  
 10) Using the cursor key, select #8 PDL (printer-related service mode).  
 11) Using the cursor key, select PDL-PCL MENU, and press the OK key.  
 12) Using the cursor key, select SERVICE MENU, and Press the OK key.  
 13) Go through the steps in F03-103-04.



END

F03-103-04

- 14) Press the Go key to end service mode.  
 15) Turn off the power.  
 16) Mount the hard disk (option) and the network board (option).  
 17) Turn on the power switch.  
 18) Enter necessary settings referring to the TEST PRINT output in Steps 1) and 2) and the Ethernet configuration page (for machines with the network board only).  
 19) Turn of the power switch.  
 20) End.



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# CHAPTER 4

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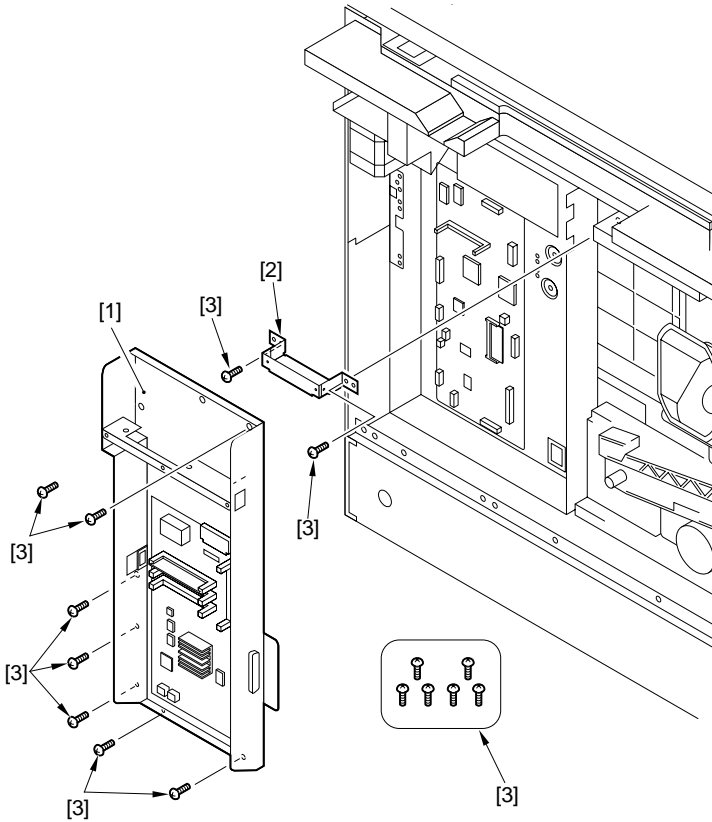
## INSTALLATION

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# 1 Printer Board-N1 Installation Procedure

## 1.1 Unpacking and Checking the Contents

Unpack the Printer Board-N1, and check its contents.



- [1] Printer board ..... 1 pc.  
 [2] Printer board base ..... 1 pc.

- [3] Screw ..... 15 pc.

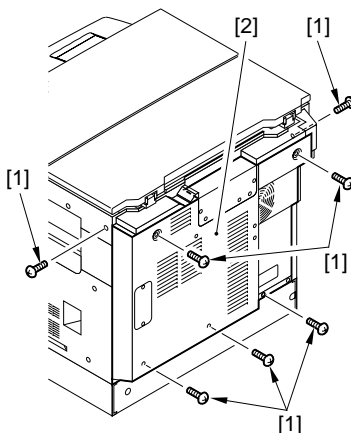
F04-101-01



Do not touch the elements of the PCB or its circuitry.

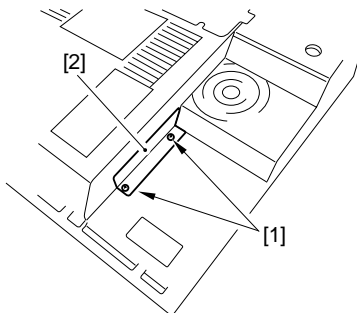
## 1.2 Installing the Printer Board-N1

- 1) Turn off the host machine's power switch, and disconnect its power plug from the power outlet.
- 2) Remove the 7 screws [1], and detach the rear cover [2].



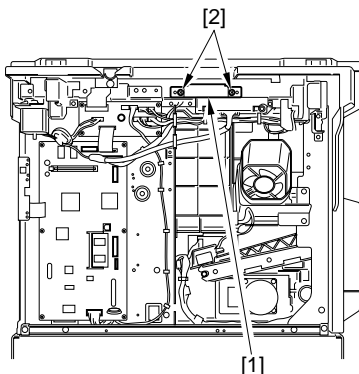
F04-102-01

- 3) Remove the 2 screws [1] from the right side of the rear cover, and detach the face cover [2] from the rear cover.



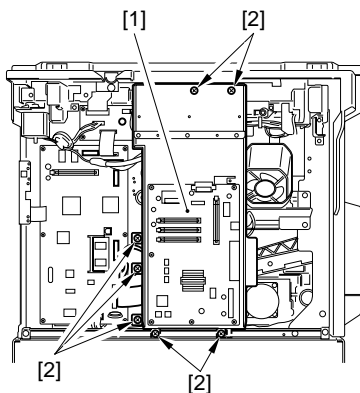
F04-102-02

- 4) Mount the printer board base [1] using 2 screws [2] that come with the board.



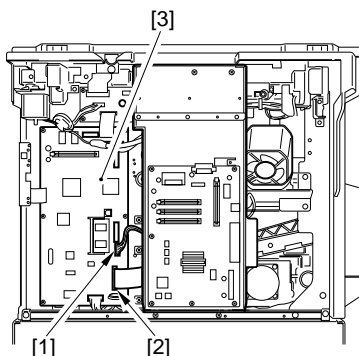
F04-102-03

- 5) Mount the printer board [1] using 7 screws [2] that come with the board. At this time, be sure that the bottom 2 screws are matched against the marking 'OP' on the host machine.



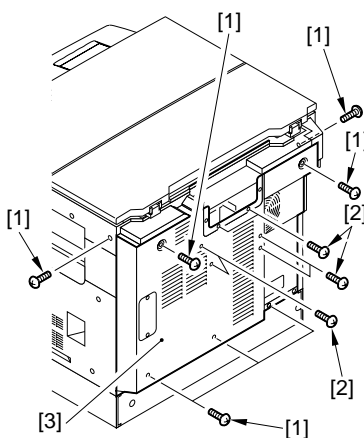
F04-102-04

- 6) Connect the connector [1] of the printer board and the flat cable [2] to the connectors of the image processor PCB [3].



F04-102-05

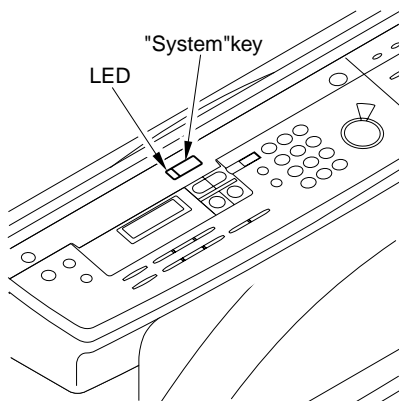
- 7) Mount the rear cover [3] using the 7 screws [1] removed in step 2) and 6 screws [2] that come with the board.



F04-102-06

## 1.3 Making Checks After Installation

- 1) Connect the power plug to the power outlet, and turn on the host machine's power switch.
- 2) Press the "System" key in the control panel, and check to be sure that the LED indicator has gone ON. If the LED indicator fails to go ON, check to see if the printer board has been correctly mounted.



F04-103-01

- 3) Go through the following to generate "TEST PRINT" for the printer board, and check to make sure that the output is normal.

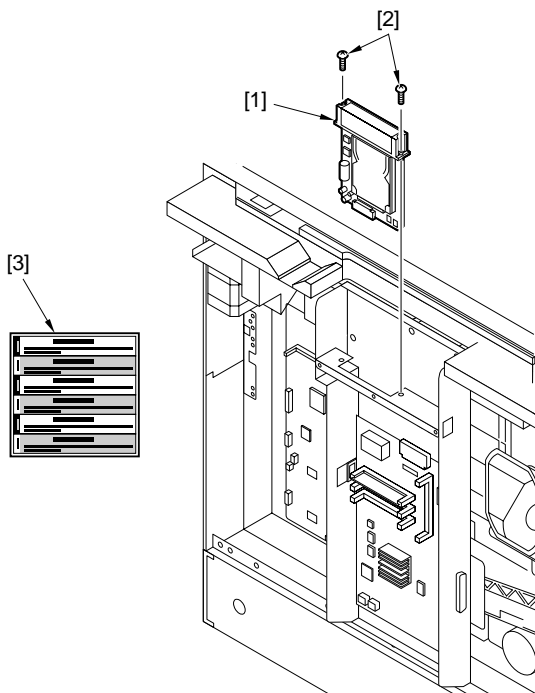
In the control panel, operate as follows: "System" key>"Go" key (so that "PAUSE" is indicated)>"Menu" key (so that "TEST MENU" is indicated)>"Item" key to select "TEST PRINT"; then, press the "Enter/Cancel" key.

If the connection is correct, the output should indicate the name/version of the printer board.

## 1.4 Unpacking the Hard Disk HD-65 and Checking the Contents

If you are installing a Hard Disk HD-65 to the Printer Board-N1, go through the following steps:

Unpack the Hard Disk (HD-65), and check its contents:



- [1] Hard disk ..... 1 pc.  
 [2] Mounting screw ..... 2 pc.

- [3] Guide sheet ..... 1 pc.

F04-104-01



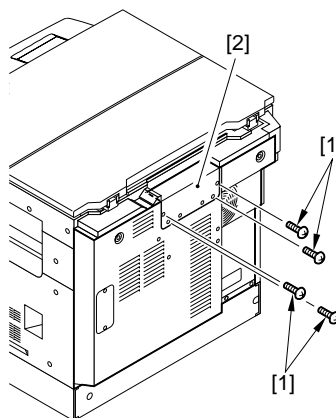
- To avoid the effects of static charges while handling the hard disk, be sure to put on a wrist strap (CK-0534-000). Otherwise, touch a metal object found in the room to rid your body of static charges.
- Do not touch the elements of the hard disk or its circuitry.
- The hard disk is highly vulnerable to impact. Take extra care when handling it.

## 1.5 Installing the Hard Disk HD-65



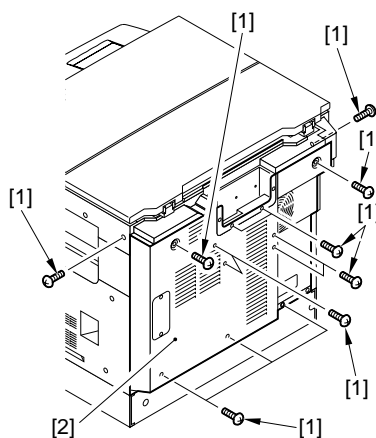
Be sure that the Printer Board-N1 has already been installed to the host machine before starting the installation work of the Hard Disk HD-65.

- 1) Turn off the host machine's power switch, and disconnect the power plug from the power outlet.
- 2) Remove the 4 screws [1] from the top of the rear cover, and remove the face cover [2].



F04-105-01

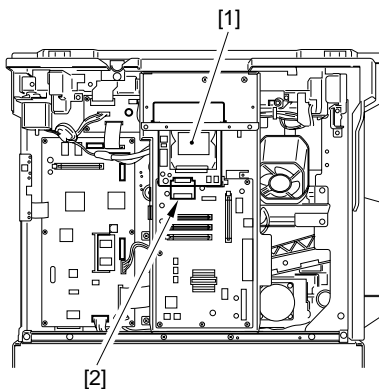
- 3) Remove the 13 screws [1], and detach the rear cover [2].



F04-105-02



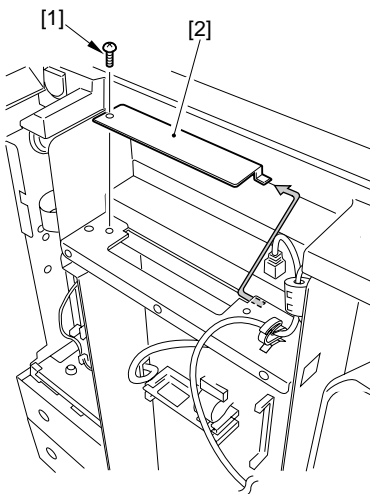
- 4) Fit the hard disk [1] to the connector [2] of the printer board.



F04-105-03

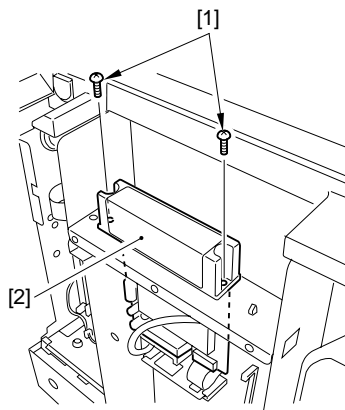


If an Ethernet Network Interface Adapter iN-E5 exists, you need to remove the mounting screw [1] and detach the HDD face plate [2] from the printer board plate as shown.



F04-105-04

- 5) Mount the hard disk using 2 screws [1] that come with the disk.



F04-105-05

- 6) Mount the rear cover removed in step 3).



If you are not installing an Ethernet Network Interface Adapter iN-E5, carry out step 7).

- 7) Mount the face cover removed in step 2).
- 8) Turn on the Power switch.
- 9) Press SYSTEM KEY to enter printer mode.
- 10) Confirm that “+FORMAT DISK -IGNORE DISK” appears on the display. Press VALUE key.
- 11) Confirm that “+REALLY FORMAT -IGNORE DISK” appears on the display. Press VALUE key.

- 12) The display changes  
“FORMATTING...” indicating that formatting of the hard disk has begun.



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It takes about 10 to 20 seconds before the formatting completes.

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Never turn off the power switch while formatting the hard disk. Turning off the power switch during the formatting may cause hard disk failure.

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- 13) After formatting completes, the display changes “DSK FMT RESTART” and the machine enters restarting process.

## 1.6 Installing the Expansion RAM/Flash ROM Module FR-65

If you are installing an expansion RAM or a Flash ROM Module FR-65 to the printer board, go through the following:



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### Points to Note for the Work

To protect the PCBs from damage caused by static charges, keep the following in mind:

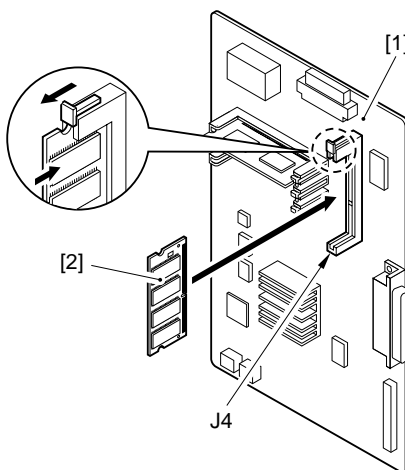
- Wear a grounded wrist strap.  
If there is no special grounding device, ground it to the frame of the host machine.
  - Keep the PCBs (RAM/ROM) in conducting bags until immediately before using them.
  - When handling a PCB, do not touch any of its terminals. Rather, hold it by keeping your fingers on its edges (base area).
  - When placing a PCB, be sure to lay it where means against static charges are provided (e.g., conducting mat; never on a metal surface).  
Otherwise, place it on or in a conducting bag.
  - Do not keep an object that can become charged within the work area.
-

### 1.6.1 Preparing for the Work

- 1) If a printer board exists in the host machine, turn off the machine's power, and disconnect its power plug from the power outlet.
- 2) To enable installation to the printer board, remove the covers as necessary from the host machine.

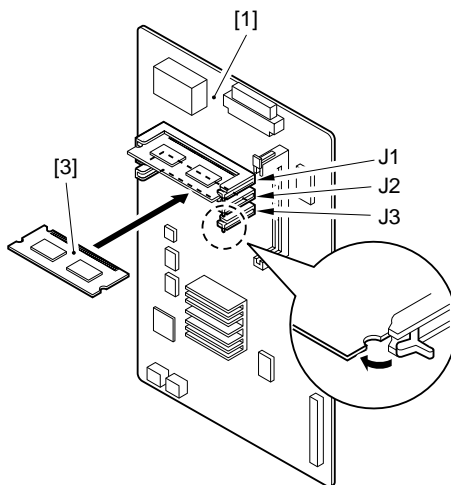
### 1.6.2 Installation

- 1) Insert the expansion RAM [2] into the RAM slot (J4) of the printer board [1]. Insert the flash ROM module [3] into a ROM slot (J1, J2, or J3; whichever is available).
  - When inserting the expansion RAM, be sure to push it in until the locking lever of the slot has risen as high as the slot. When inserting the flash ROM module, be sure to push it in until the locking lever of the slot has been locked in position in the cut-off of the ROM.
- Fitting the Expansion RAM



F04-106-01

- Fitting the Flash ROM Module



F04-106-02

- 2) Put back all covers that were removed from the host machine.
- 3) Connect the power plug to the power outlet, and turn on the host machine's power.

### 1.6.3 Making Checks After Installation

#### a. If an Expansion RAM Has Been Installed

Generate “TEST PRINT” of the printer board as follows, and check to make sure that the memory size reflects the size of the installed expansion RAM.

In the control panel, operate as follows:  
“System” key>“Go” key (so that “PAUSE” is indicated)>“Menu” key (so that “TEST MENU” is indicated)>“Item” key to select “TEST PRINT”; then press the “Enter/Cancel” key.

#### b. If a Flash ROM Module Has Been Installed

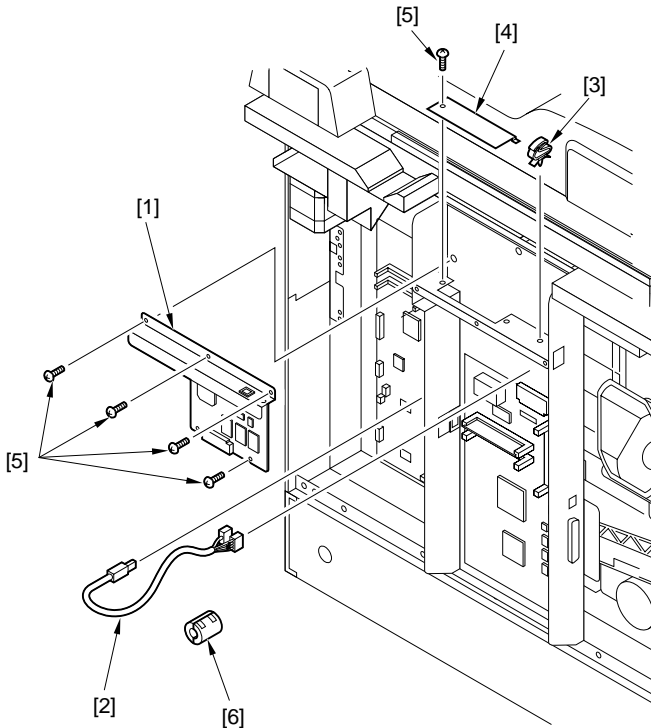
Generate “THE PINT” of the printer board as follows, and check to make sure that the name/version of the flash ROM module is indicated:

In the Control panel, operate as follows:  
“System” key>“Go” key (so that “PAUSE” is indicated)>“Menu” key (so that “TEST MENU” is indicate)>“Item” key to select “TEST PRINT”; then, press the “Enter/Cancel” key.

## 2 Ethernet Network Interface Adapter iN-E5 Installation Procedure

### 2.1 Unpacking and Checking the Contents

Unpack the Ethernet Network Interface Adapter iN-E5, and check its contents:



- [1] Network interface adapter 1 pc.
- [2] USB cable ..... 1 pc.
- [3] Cable clamp ..... 1 pc.

- [4] HDD face plate ..... 1 pc.
  - [5] Mounting screw ..... 5 pc.\*
  - [6] Ring core ..... 1 pc.
- \*One of which is equipped with a washer.

F04-201-01



Do not touch the elements on the PCB or in the circuitry.

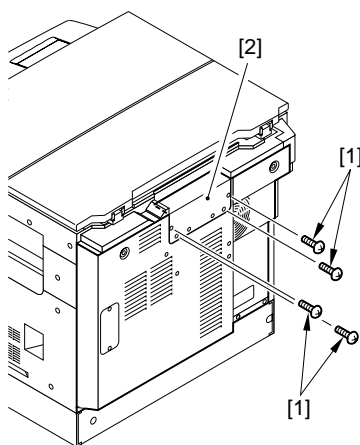


## 2.2 Installation



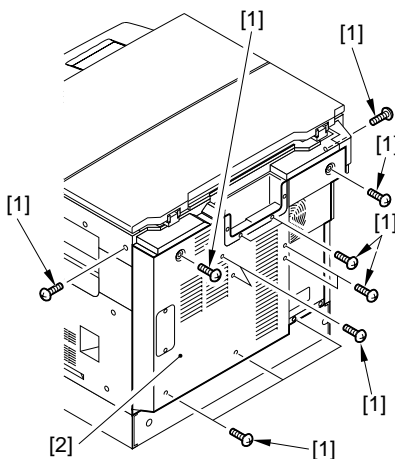
Be sure that the Printer Board-N1 has already been installed to the host machine before starting the installation work of the Ethernet Network Adapter iN-E5.

- 1) Turn off the host machine's power switch, and disconnect its power plug from the power outlet.
- 2) Remove the 4 screws [1] from the top of the rear cover, and detach the face cover [2].



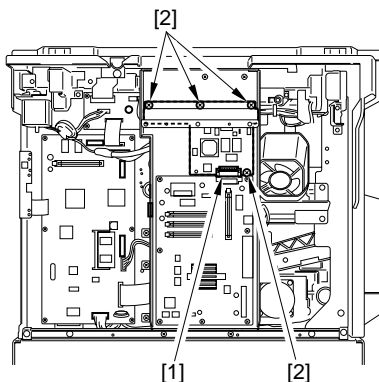
F04-202-01

- 3) Remove the 13 screws [1], and detach the rear cover [2].



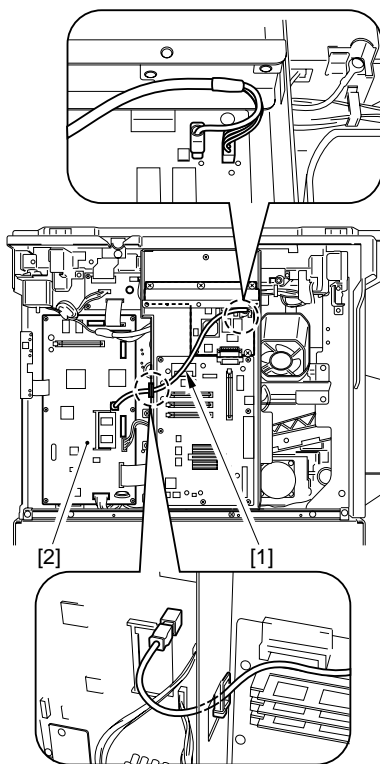
F04-202-02

- 4) Connect the network interface adapter to the connector [1] of the printer board, and secure it in place using 4 screws [2] that come with the adapter. (Be sure to use the screw equipped with a washer for the PCB.)



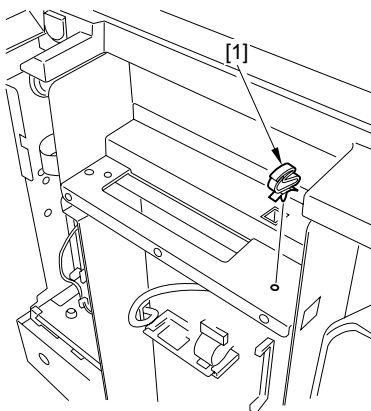
F04-202-03

- 5) As shown, connect the network interface adapter and the image processor PCB [2] with the USB cable [1] that comes with the adapter. At that time, be sure to keep the USB cable in place using the cable clamp.



F04-202-04

- 6) Fit the cable clamp [1] that comes with the adapter to the plate for the printer board.

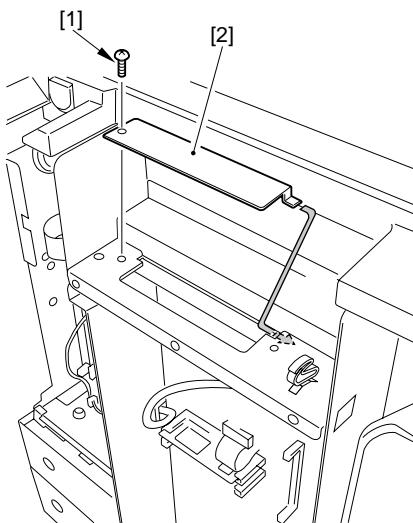


F04-202-05



If you are not installing a hard disk (HD-65), carry out step 7).

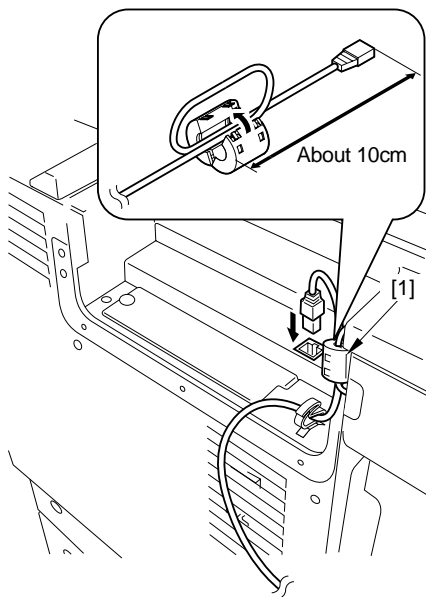
- 7) Mount the HDD face plate [2] using a screw [1] that comes with the adapter.



F04-202-06

- 8) Mount the rear cover you removed in step 3).

- 9) As shown, mount the ring core [1] that comes with the adapter to the network cable, and connect it to the network interface adapter. At this time, be sure to secure the network cable using the cable clamp fitted in step 6).

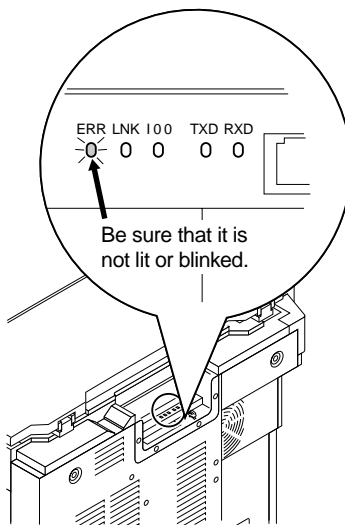


F04-202-07

## 2.3 Making Checks After Installation

### a. Making Initial Checks of the Network Interface Adapter

- 1) Connect the power plug to the power outlet, and turn on the host machine's power switch; then, check to make sure that the ERR LED indicator on the network interface adapter goes OFF. If the ERR LED indicator remains ON, reinstall the network interface board.



F04-203-01

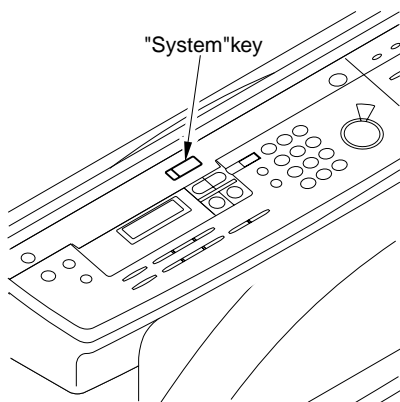
The LED indicators are used as follows:

- RXD : green; ON during reception of data.
- TXD : green; ON during transmission of data.
- 100 : green; ON during operation at 100 Mbps;  
OFF during operation at 10 Mbps.
- LNK : green; ON if network connection is normal.
- ERR : orange; ON and blinks if operation is faulty.

## b. Checking the Status

- 1) Go through the following to generate "TEST PRINT" using the printer board.

In the control panel, operate as follows: System key> Go key (so that "PAUSE" is indicated)> Menu key (so that "TEST MENU" is indicated)> Item key; then select "TEST PRINT", and press the Enter/Cancel key.



F04-203-02

- 2) Check to make sure that the notation "ETHERNET MENU" is found in the test print output.

If the notation "ETHERNET MENU" is not indicated in the test print output of the printer board, check to make sure once again that the board is mounted correctly.

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# CHAPTER 5

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## TROUBLESHOOTING

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# 1 Service Mode

## 1.1 Outline

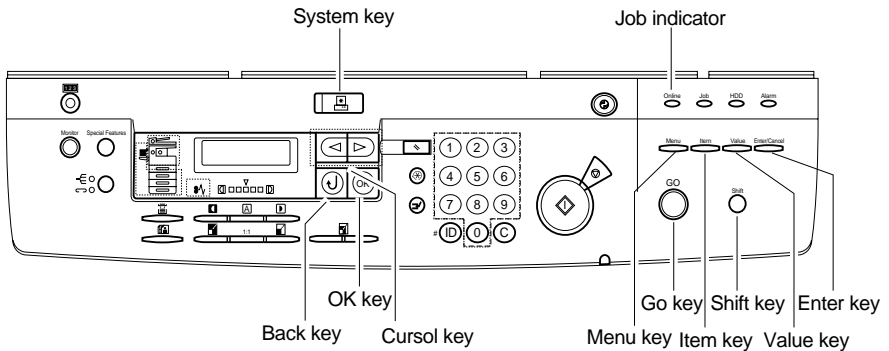
You can use the host machine's service mode to make printer-related service mode settings as follows:

### Making Settings

- 1) Press the Additional Functions key and then the ID (#) key in the control panel to start service mode.
- 2) Using the cursor key, select #8 PDL (printer-related service mode).
- 3) Using the cursor key, select PDL-PCL MENU, and press the OK key.
- 4) Using the cursor key, select MENU, and press the OK key.

If you have selected SERVICE MENU, go through the following:

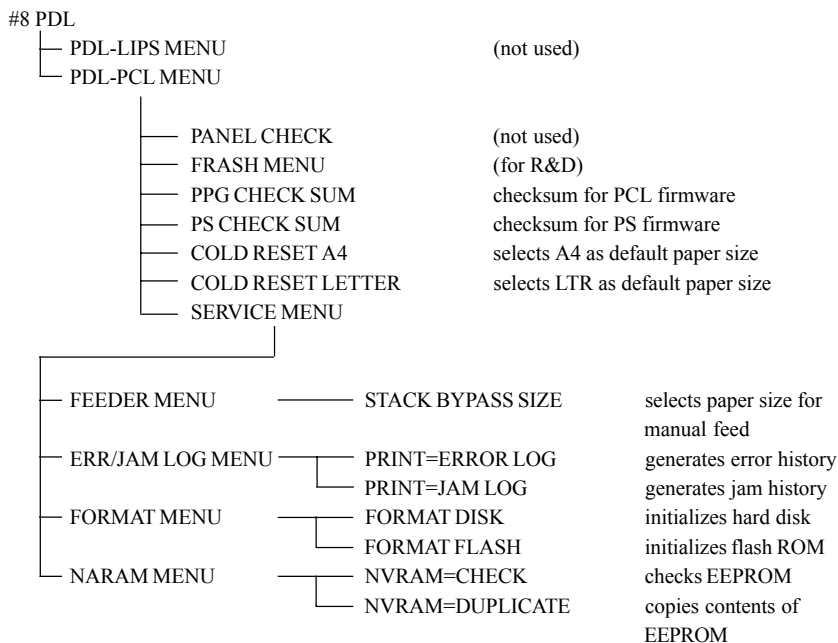
- 5) Using the MENU key, select the desired menu.
- 6) Using the ITEM key, select the desired item.
- 7) Using the VALUE key, select the desired setting.
- 8) Press the ENTER key to store the setting.
- 9) Press the Go key to end service mode.



F05-101-01



The following is the menu items for service mode:



## 1.2 Functions of Service Mode

The functions of each service mode item are as follows:

### PPG CHECK SUM/PS CHECK SUM

The host machine performs a check sum operation on the requested ROM bank. The calculated Check Sum is displayed on the LCD.

### COLD RESET A4/LETTER

The host machine sets the default to the selected paper size (A4/LTR), and resets it to zero, if the page count is less than 50.

### FEEDER MENU

You may select any of the following paper sizes for manual feed:

A4, LETTER, LEGAL, A5, B5-JIS, COM10, MONARCH, C5, DL, A3, B4, 11x17, CUSTOM, STATEMENT, B5-ISO.

### ERR/JAM LOG MENU

- PRINT=ERROR LOG

Indicates the times, codes, and locations of the most recent 20 errors.

- PRINT=JAM LOG (jam history output)

Indicates the times, codes, and locations of the most recent 20 jams.

### FORMAT MENU

- FORMAT DISK

Initializes the hard disk.

- FORMAT FLASH

Initializes the flash ROM.

### NVRAM MENU

- NVRAM=CHECK

Indicates the counter readings of the 3 NVRAMs on the printer board.

NVRAM1=built-in NVRAM, NVRAM2=IC4, NVRAM3=IC5

- NVRAM=DUPLICATE

Copies the contents of the existing NVRAM (EEPROM) at time of printer board replacement.

The NVRAM contains the following data: page counter readings of the printer, panel settings of the printer, error/jam history, serial number.

## 2 Self Diagnosis

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### 2.1 Outline

When the host machine is turned on, the printer unit runs its self diagnostic program for hardware, thereby checking the Board, expansion ROM, expansion RAM, and expansion I/O port. If a fault is detected as a result, the host will indicate the following in its control panel: warning message, NORMAL ERROR, or SERVICE CALL ERROR.

## 2.2 Warning Messages

A warning message may be any of the following; take the action given to suit each message:

Message	Meaning	Action
MEMORY OVERFLOW	A memory overflow has occurred.	The printer has received more data than it can hold in the available memory on the printer board. If AUTOCONT is ON (CONFIG MENU), the print job will be put back online after 10 sec. If AUTOCONT is OFF, the printer will go offline. Press the Go key and the print job will continue printing, although data may be lost. Simplify the print job by deleting unnecessary fonts or macros from the printer memory, or add additional memory to the printer.
FLASH OVERFLOW	A memory overflow has occurred in the optional Flash ROM.	The printer has received more font and macro data than it can hold in the available memory of the Flash ROM. The printer will go offline. Press the Go button to put the printer back online. Format the Flash ROM or delete font and macro data to create more space.
MRT COMPRESSION	The printer is processing complex data.	The printer is using MRT Compression because the page is too complex. Wait a moment for the operation to complete.
DISK ALMOST FULL	The optional hard disk is 70% or more full.	Delete any font or macro files that are no longer needed to increase the amount available disk space.
DISK FULL	The optional hard disk is 95% full, and the printer will go offline.	The printer will be put back online after 10 sec, if AUTOCONT is ON (CONFIG MENU). Delete any fonts or macro files that are no longer needed to increase the amount of available disk space.
READY JOB LOG FULL	The amount of stored job logs will exceed the maximum limit.	Delete unnecessary job logs from the hard disk.
READY NEAR STORE LIMIT	The number of stored print jobs will exceed the maximum of 9500.	Delete unnecessary print jobs from the hard disk.

## 2.3 Normal Error

A normal error indication may be any of the following; take the action given to suit each indication:

Message	Meaning	Action
AUTHENTICATION ERROR	Invalid password	Enter the correct password.
EXCEEDS STORE LIMIT	Unable to save a print job on the printer hard disk.	There is not enough available free space on the hard disk. Delete unnecessary print jobs from the hard disk, and then, press the Go key on the printer.
PS OPTION ERROR	An option PS module error occurred.	An option ROM has failed the startup checksum. Replace the option ROM.
OPTION RAM ERROR	An option RAM error occurred.	An option RAM has failed the startup diagnostic. Replace the option RAM.
OPTION ROM ERROR	An option ROM error occurred.	An option ROM has failed the startup checksum. Replace the option ROM.
FLASH ERROR	The Flash ROM error occurred.	Replace the Flash ROM.
WRITING DISK ERROR	Unable to write to the printer hard disk.	Make sure that the hard disk is installed correctly. Turn off the printer, and then turn it on again. If the warning persists, format the hard disk.
READING DISK ERROR	Unable to read the printer hard disk.	Make sure that the hard disk is installed correctly. Turn off the printer, and then turn it on again. If the warning persists, format the hard disk.
MEM ALLOC ERROR	Not enough memory to process the data and print the page.	If AUTOCONT is ON (CONFIG MENU), the printer will be put back online after 10 sec. If AUTOCONT is OFF, press the GO key to put the printer back online. Check the printed page to ensure that the print job is complete.

PARALLEL INTER- FACE ERROR	A parallel port error occurred.	Correct the connection after checking the connector. Then, restart the printer. If the warning persists, replace the printer board.
USB INTERFACE ER- ROR	A USB port error occurred.	Correct the connection after checking the connector. Then, restart the printer. If the error persists, replace the printer board.
ETHERNET OPTION ERROR	A network interface board error occurred.	Restart the printer after checking the installation of the network interface board. If the error persists, replace the network interface board.
JOB STORING RE- JECTED	The receiving print job will stop.	The mount of the stored job logs will exceed the maximum limit. Delete unnecessary job logs from the hard disk.

## 2.4 Service Call Error

A service call error may be any of the following; take the action given to suit each indication:

Message	Meaning	Action
E676 CALL FOR SERVICE	A communication error occurred between the host machine and the printer board.	Restart the printer. If the error persists, replace the printer board. If the error persists, replace the image processor PCB.
E677/6F-7A CALL FOR SERVICE	An SRAM error occurred in the ASIC.	Restart the printer. If the error persists, replace the printer board.
E677/6F-61 CALL FOR SERVICE	An internal ROM check error occurred.	Restart the printer. If the error persists, replace the printer board.
E677/6F-63 CALL FOR SERVICE	An internal RAM error occurred.	Restart the printer. If the error persists, replace the printer board.

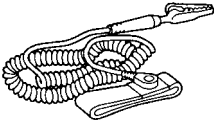
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# APPENDIX

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## 1 Special Tools

You will need the following tools in addition to the standard tools set to service the Board:

No.	Tool name	Tool No.	Appearance	Rank	Remarks
1	Wrist strap	CK-0534-000		A	



REF.

### Rank

A : Each service person is expected to carry one.

B : Each group of 5 service persons is expected to carry one.

C : Each workshop is expected to carry one.